

REMARKS

Further and favorable reconsideration is respectfully requested in view of the foregoing amendments and following remarks.

Claims 1 and 6 have been amended to recite that the alloy comprises 5.0 to 10.0 wt% Zn, and that the balance of the alloy is Cu and unavoidable impurities. Support for these amendments can be found on page 6, lines 16-21 and page 8, line 20 of Applicants' specification.

Claim 1 has also been amended to delete the term "satisfying" and the phrase "to enable securing prescribed machinability and wholesome-ness of a casting and exalt mechanical properties thereof." Claims 4, 12 and 13 have been amended to replace the word "satisfies" with the word "comprising".

Claim 6 has also been amended to recite particular amounts of Sn, Bi and Se, and to incorporate the limitations of 7-9. Support for these amendments can be found on page 6, lines 19-22 and page 10, lines 19-21 of Applicants' specification.

Claims 1-8 and 11-16 have been amended to make minor editorial changes, in order to place the claims in more conventional U.S. format.

Claims 9, 17, 18 and 26 have been cancelled.

The rejection of claims 1-5, 10-13 and 19-22 as being indefinite under 35 U.S.C. § 112, second paragraph has been obviated in view of the above-discussed claim amendments.

The patentability of the present invention over the disclosures of the references relied upon by the Examiner in rejecting the claims will be apparent upon consideration of the following remarks.

Thus, the rejection of claims 6-9, 17, 18 and 23-26 under 35 U.S.C. § 102(b) as being anticipated by Oishi or JP '375, as well as the rejection of claims 1-5, 10-16 and 19-22 under 35 U.S.C. § 103(a) as being unpatentable over Oishi or JP '375 is respectfully traversed.

The Examiner takes the position that the cited references disclose the recited alloying elements such as Sn, Bi and Se, except for the volume of non-solid solution. The Examiner takes the position that the claimed "non-solid solution" property is a material property which would have been inherently possessed by the materials of the

cited references since the claimed alloying elements are anticipated by the cited references.

Applicants' amended claim 1 recites a copper-based alloy comprising 5.0 to 10.0 wt% of Zn, 2.8 to 5.0 wt% of Sn, 0.4 to 3.0 wt% of Bi, $0 < \text{Se} \leq 0.35 \text{ wt\%}$, and a balance of Cu and unavoidable impurities. Applicants' amended claim 6 recites a copper-based alloy comprising 5.0 to 10.0 wt% of Zn, 2.8 to 5.0 wt% of Sn, 0.4 to 3.0 wt% of Bi, $0 \leq \text{Se} \leq 0.35 \text{ wt\%}$, and a balance of Cu and unavoidable impurities, and further comprising 1.20 to 4.90 vol% of at least one selected from the group consisting of a non-solid solution substance secured with Bi and a non-solid solution substance secured with Bi and Se.

Oishi discloses a copper-based alloy, containing greater than 3 percent silicon, and also containing 0.02 to 0.4 wt% Bi and 0.02 to 0.4 wt% Se. Oishi does not teach or suggest the copper-based alloy, as recited in Applicants' amended claims 1 and 6, for the following reasons.

Initially, the copper-based alloy of Oishi comprises greater than 3 percent silicon. On the contrary, Applicants' claimed alloy comprises zinc, tin, bismuth, selenium and the balance of copper and unavoidable impurities.

Secondly, Oishi does not teach or suggest a copper-based alloy comprising 5.0 to 10.0 wt% of Zn, as required in Applicants' amended claims. On the contrary, Oishi teaches large amounts of Zinc. For example, the alloy recited in claim 1 of the reference contains between 17 and 28 wt% Zn. This is clearly outside Applicants' recited range.

Thirdly, Oishi does not teach or suggest a copper-based alloy which comprises 1.20 to 4.90 vol% of at least one selected from the group consisting of a non-solid solution substance secured with Bi and a non-solid solution substance secured with Bi and Se. The Examiner asserts that the "non-solid solution" property is a material property which would have been inherently possessed. However, the Examiner has failed to point to any portion of the reference which teaches or suggests this limitation. Further, the Examiner has failed to provide any evidence or reasoning to support the assertion that this limitation is an inherent property of the alloy.

Additionally, as discussed above, the alloy of Oishi is different from the alloy recited in Applicants' claims. Therefore, the Examiner's position regarding inherency,

which is based on the assumption that the alloy of the reference is identical to the claimed alloy, is untenable.

JP '375 discloses a bronze alloy containing 0.5 to 2.5 wt% of Bi, 0.35 to 1.2 wt% of Se, 0.25 wt% or less of Sb and 0.1 to 1.0 wt% of Mg, which is excellent in corrosion resistance. JP '375 does not teach or suggest the copper-based alloy, as recited in Applicants' amended claims 1 and 6, for the following reasons.

Initially, the alloy of JP '375 comprises Sb and Mg. On the contrary, Applicants' claimed alloy comprises zinc, tin, bismuth, selenium and the balance of copper and unavoidable impurities.

Secondly, similar to the discussion regarding Oishi above, JP '375 does not teach or suggest a copper-based alloy which comprises 1.20 to 4.90 vol% of at least one selected from the group consisting of a non-solid solution substance secured with Bi and a non-solid solution substance secured with Bi and Se. The Examiner asserts that the "non-solid solution" property is a material property. However, the Examiner has failed to point to any portion of the reference which teaches or suggests this limitation. Further, the Examiner has failed to provide any evidence or reasoning to support the assertion that this limitation is an inherent property of the alloy.

Additionally, as discussed above, the alloy of JP' 375 is different from the alloy recited in Applicants' claims. Therefore, the Examiner's position regarding inherency, which is based on the assumption that the alloy of the reference is identical to the claimed alloy, is untenable.

Since claims 2-5, 7, 8, 10-16 and 19-25 are dependent on either claim 1 or 6, these claims are patentable over the cited references for the same reasons claims 1 and 6 are patentable over the references.

For these reasons, the invention of claims 1-8, 10-16 and 19-25 is clearly patentable over Oishi and JP '375. [Claims 9, 17, 18 and 26 have been cancelled.]

The rejection of claims 1-26 under 35 U.S.C. § 103(a) as being unpatentable over Singh is respectfully traversed.

The Examiner takes the position that Singh discloses the features including the claimed Cu based alloy composition.

Singh discloses a copper-based alloy particularly containing 0.1 to 7 wt% of Bi and 0.2 to 2 wt% of misch metal. Singh does not teach or suggest the copper-based alloy, as recited in Applicants' amended claims 1 and 6 for the following reasons.

Initially, the copper-based alloy of Singh comprises 0.2 to 2 wt% of misch metal. On the contrary, Applicants' invention comprises zinc, tin, bismuth, selenium and the balance of copper and unavoidable impurities.

Additionally, similar to the discussion above, Singh does not teach or suggest a copper-based alloy which comprises 1.20 to 4.90 vol% of at least one of a non-solid solution substance secured with Bi and a non-solid solution substance secured with Bi and Se. The Examiner asserts that the "non-solid solution" property is a material property. However, the Examiner has failed to point to any portion of the reference which teaches or suggests this limitation. Further, the Examiner has failed to provide any evidence or reasoning to support the assertion that this limitation is an inherent property of the alloy.

Additionally, as discussed above, the alloy of Singh is different from the alloy recited in Applicants' claims. Therefore, the Examiner's position regarding inherency, which is based on the assumption that the alloy of the reference is identical to the claimed alloy, is untenable.


Since claims 2-5, 7, 8, 10-16 and 19-25 are dependent on either claim 1 or 6, these claims are patentable over the cited reference for the same reasons claims 1 and 6 are patentable over the reference.

For these reasons, the invention of claims 1-8, 10-16 and 19-25 is clearly patentable over Singh. [Claims 9, 17, 18 and 26 have been cancelled.]

Therefore, in view of the foregoing amendments and remarks, it is submitted that each of the grounds of rejection set forth by the Examiner has been overcome, and that the application is in condition for allowance. Such allowance is solicited.

Respectfully submitted,

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